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TITLE: Measuring the Economic Impact of ICTs: An Overview

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

8TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING
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Session 1: Measuring ICT impact
joint ITU/OECD/EU session

Measuring the Economic Impact of ICTs: An Overview

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Outline

1. Present common methods to measure ICT impact
2. Summarize data needs
3. Give examples from OECD work

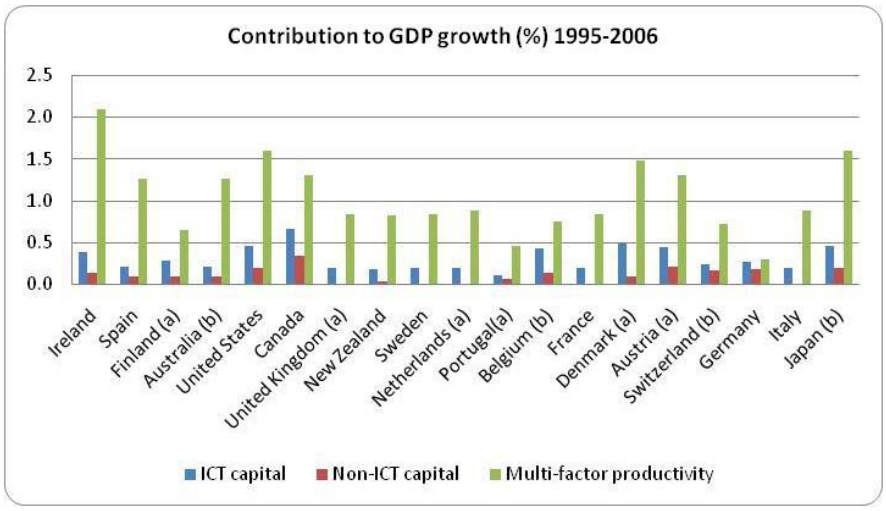
- Growth accounting
- Productivity
- ICT diffusion
- Final demand/Multiplier effects
- Micro data:
  - Innovation
  - Education

Growth accounting

What is the contribution of ICT investment to growth?

- GDP = Labour + ICT capital + Non-ICT capital +...
- Data needs:
  - Inputs remuneration (wages, capital costs,...)
  - ICT and Non-ICT investments
  - ICT capital price
- See: OECD Manual on Measuring Capital
  OECD Productivity Database

Contribution to GDP Growth 1995-2006

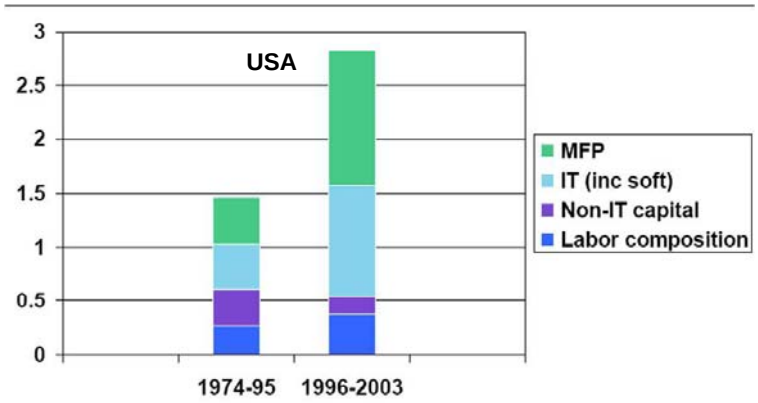


Productivity

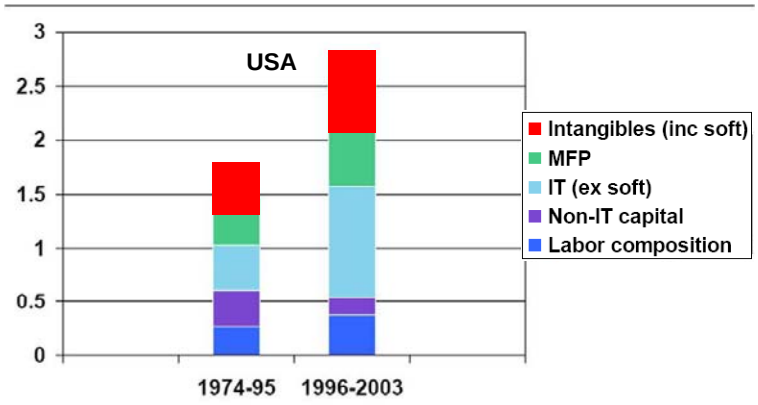
Does ICT investment increase productivity?

- Multi Factor Productivity = growth in GDP not explained by growth in labour, capital, …
- MFP accounts for a large share of GDP growth
- MFP is explained by ICT ***and*** Knowledge Investments
- Intangibles:
  - Software
  - R&D
  - Brand Equity
  - Firm-specific human capital
  - Organisational know-how
- See: OECD Science, Technology and Industry Scoreboard

Multi factor productivity (MFP) remains important…



…and Intangibles explain a large part of it



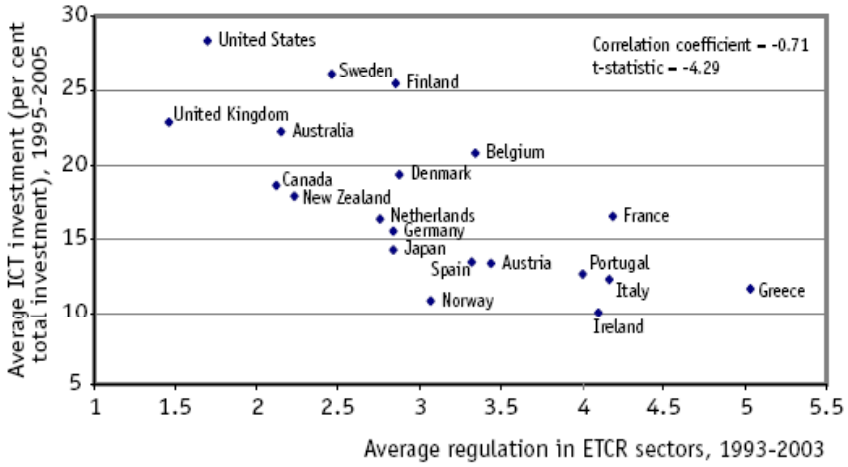
- Same results in the UK and Japan

ICT diffusion

Why is ICT adoption slow in some countries?

- Financial markets: difficult access to credit
- Product regulation: low competition
- Labour regulation: high costs for failure
- Data needed:
  - % of firms using ICT *or* ICT investment
  - Indicators of regulation
  - Cost of failure
  - Cost of credit
  - Degree of competition
- See: OECD Indicators of Economy-wide Regulation

Product Market Regulation and ICT Investments



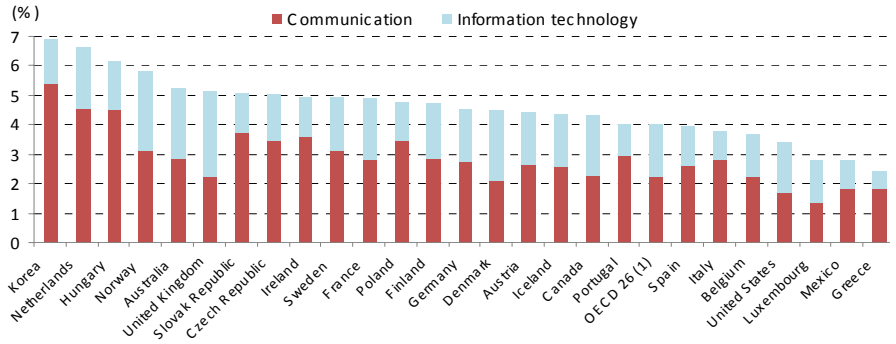
Source: Conway and Nicoletti (2006) OECD

Final demand

What is the effect of final demand for ICT on growth?

- Domestic demand
- Exports
- Data needs:
  - Household expenditure survey
  - Trade statistics
  - Classification of ICT goods and services
- See: OECD Guide to Measuring the Information Society

Household Propensity to Spend on ICT



Multiplier effects

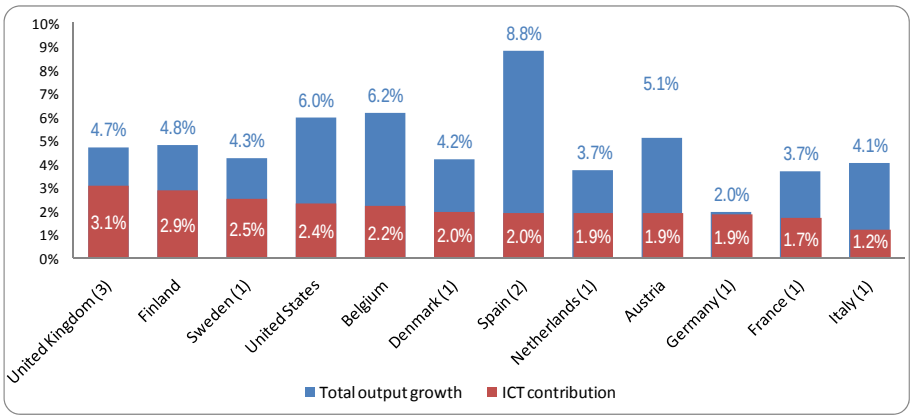
- ***Final demand***: ICT offers new goods and services for consumers;
- ***Demand multiplier***: ICT supply increases demand for the output of other industries;
- ***Supply multiplier***: ICT supply creates new opportunities for production in other industries.
- Data needs: Input/Output tables
- See: OECD Input/Output Database

Multiplier Effects of ICT on Growth 2001-06

Largest in UK, Finland and Sweden

Large also in US and Belgium

Small in France and Italy



Micro data ICT and Innovation

2 statistical sources:

1. the ICT Business Survey
2. the Innovation Survey

Data from 1 & 2 have been linked at the firm level

Due to confidentiality reasons, no access to data:

- A network of researchers with access to micro-data...
- ...based on the same econometric model set by OECD

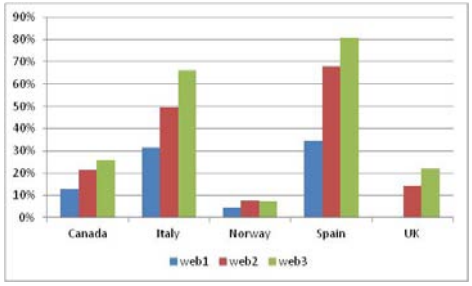
14 researchers from 9 countries:

Canada, Italy, Luxembourg, the Netherlands, Norway, Spain, Sweden, Switzerland and the UK

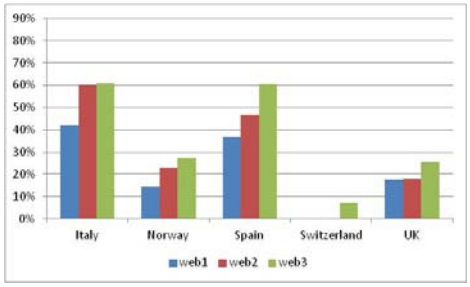
ICT and innovation

*ICT use increases the probability to **innovate***

Manufacturing



Services

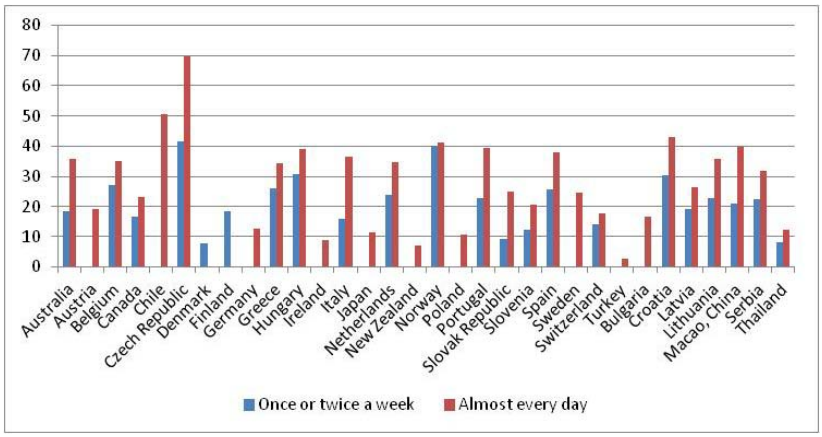


Micro data
ICT and Education

- ICTs as a tool for leaning:
  - Policy makers: enthusiast
  - Researchers: little evidence
- Public investments in school are significant
- "Belief that, sooner or later, schools and teachers will adopt it and benefit from it" OECD, 2010
- Are ICT investments paying back?
  - OECD PISA survey

ICT and education

Computer use increase students' performance



More information?

- ICT Partnership for Development: "Measuring ICT Impact: A User Guide" *ongoing*
- OECD Guide to Measuring the Information Society
- OECD Manual on Measuring Capital
- OECD Manual on Productivity Measurement
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